AMENDMENT TO THE SPECIFICATION

Please amend the paragraph commencing on line 3 of page 1, as follows:

The ~~disclosure~~ present invention relates to catalytic converters for mobile vehicles and, more particularly, to an apparatus and method for manufacturing a catalytic converter.

Please amend the paragraph commencing on line 11 of page 5, as follows:

Referring to Figures 3 and 4, located in between catalyst substrate 42 and a catalytic converter shell 46 is a mat support material 44 that insulates the shell from both the high exhaust gas temperatures and the exothermic catalytic reaction occurring within ~~the~~ a catalytic converter 40. The mat support material 44 further enhances the structural integrity of catalyst substrate 42 by applying compressive radial forces about it, reducing its axial movement, and retaining it in place. The mat support material 44 can either be a simple non-intumescent ceramic material, or an intumescent material, e.g., one which contains a vermiculite component that expands with heating to maintain firm compression when the shell 46 expands outward from the catalyst substrate 42, as well as materials which include a combination of both.

Please amend the paragraph commencing on line 22 of page 5, as follows:

The mat support material 44/catalyst substrate 42 subassembly can preferably be inserted into shell 46. Shell 46 includes at least one opening 48 for receiving the subassembly. The subassembly can preferably be disposed concentrically within and surrounded by shell 46. The choice of material for the shell 46 can depend upon the type of exhausts gas, the maximum temperature of the exhaust gas, the maximum temperature reached by the catalyst substrate 42, and the like. Suitable materials for the shell 46 can comprise any material that is capable of resisting under-car salt, temperature and corrosion. Typically, ferrous materials are employed such as ferritic stainless steels. Some ferritic

stainless steels include grades taken from the 400-Series such as SS-409, SS-439, and SS-441, with grade SS-409 generally preferred.

Please amend the paragraph commencing on line 1 of page 6, as follows:

Typically, the mat support material 44/catalyst substrate 42 subassembly can be inserted into shell 46 using a stuffing cone, for example. The stuffing cone is a device that compresses mat support material 44 concentrically about catalyst substrate 42 using a ramming component. The ramming component then stuffs the compressed mat support material 44/catalyst substrate 42 subassembly into shell 46 without peeling mat support material 44 away from the outer periphery 58 of catalyst substrate 42. In the alternative, a compressive sizing operation can be employed once the subassembly is disposed concentrically within shell 46. Shell 46 can be compressively sized to achieve the desired mat pressure to be exerted upon catalyst substrate 42.

Please amend the paragraph commencing on line 11 of page 6, as follows:

Referring now to Figures 5-8, catalytic converter designs for attachment to exhaust manifolds are shown. An exhaust manifold 140, as shown in a front view in Figure 5 and a side view in Figure 6, is designed to collect exhaust gases exiting the cylinders of an engine. Exhaust manifold 140 comprises a collection of pipes or runners, whose number corresponds with the number of cylinders in the engine, which upon exiting the engine compartment, are bent and directed to a single collector body 144 leading to a catalytic converter 142, and then to an exhaust pipe. An exhaust manifold collector body 144 having a plurality of pipes or runners 148 can place exhaust manifold 140 in contact with catalytic converter 142 ~~creates~~ to create a manifold/converter. Catalytic converter 142, as shown in a partial cross-sectional view in Figure 7 and an exploded partial cross-sectional view in Figure 8, can include a mat protection ring 90. Mat protection ring 90 can be inserted into collector body 144 to penetrate the compressed mat support material 44. As illustrated in Figure 8, mat protection ring 90 at one end penetrates mat support material 44 a certain distance, typically 2-

8 mm, indicated by the letter "d". Referring now to Figure 8, mat protection ring 90 and a shell 146 can be locked into position within exhaust manifold collector body 144 to form a gas tight seal by a casting operation of the exhaust manifold, for example, suspending aligning mat protection ring 90 and shell 146 in a mold for casting the exhaust manifold. Exhaust manifold collector body 144 and shell 146 can preferably be joined together at a juncture, indicated by the letter "A" in Figure 8, without adding a weld flange to the collector body 144. The casting can preferably seal exhaust manifold collector body 144 and shell 146 together to provide a gas tight seal.

Please amend the paragraph commencing on line 1 of page 7, as follows:

In an exemplary embodiment depicted in Figures 9 and 10, an exhaust manifold 140 is shown having a shell 146 and mat protection ring 90 inserted into exhaust manifold collector body 144 during the manufacture and casting of exhaust manifold 140. During the casting of an exhaust manifold 140, catalytic converter components made of wrought material are inserted into a mold for an exhaust manifold 140 so that the converter components are cast into the manifold 140. The catalytic converter components may be in subassembly form (e.g., shell 146 with a mat protection ring 90, inner/outer endcone, endplate, etc. . . .) or completed converter basic assembly. After the converter components are cast into the manifold, conventional converter manufacturing operations (e.g., stuffing, welding, spinforming, etc. . . .) can be used. This method of manufacture eliminates the costly manifold to converter weld, and the high hardness, low ductility microstructure that is present in the weld heat affected zone of the cast iron manifold. Furthermore, by using converter components made from a material such as 409 stainless steel as opposed to extending the iron casting, the improved strength and corrosion resistance of the 409 stainless steel are gained without making the whole casting from 409 stainless steel. The wrought converter components, typically having a 1-2 mm wall thickness, also reduce the mass of the manifold/converter compared to thin wall castings having a 3-4 mm thickness.

Please amend the paragraph commencing on line 21 of page 7, as follows:

Figure 10 shows an exhaust manifold/converter 150 with a cast-in shell 146 and a mat protection ring 90. It should be noted that retention features 152 may be desired on the inserted ends of the converter components coupled exhaust manifold collector body 144 when there is not a metallurgical bond between the converter component inserted ends and the cast exhaust manifold 140. Retention features 152 may be features such as bumps, flares, grooves and any combination comprising at least one of the forgoing on the insert(s) that interlock with the casting. The mat protection ring 90 in Figure 10 has a retention feature 152 to aid in the prevention of mat protection ring 90 from pulling out of the manifold collector ~~body144~~ body 144. Likewise, shell 146 has a groove 156 at one end that is received and interlocked when casting the manifold collector body 144 with the grooved end of shell 146 inserted.